

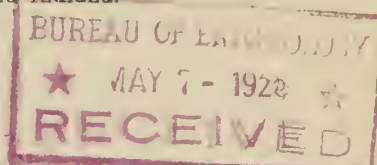
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Issued in the interest of corn-borer control conducted by the United States Department of Agriculture in cooperation with the State departments of agriculture and State agricultural colleges in New York, Pennsylvania, Ohio, Michigan, and Indiana.



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#### COMPULSORY CLEAN-UP BEGINS



May 1 marked the date for the beginning of compulsory clean-up in those fields not already cleaned up by the farmers in the counties of the States enforcing a complete clean-up.

Federal machinery purchased for last spring's campaign has been put in readiness and is now being moved into the States where clean-up regulations are being enforced and will be used to assist the States in the work left to them.

The regulatory areas are in the most heavily infested territory and farmers, realizing the corn-borer danger, are cleaning up their fields without compensation.

#### EDUCATIONAL NEWS NOTES

Farmers on Long Island, N. Y., are making an intensive fight on the corn borer. To assist with the educational work, a special agent, Paul W. Thayer, has been appointed with headquarters in Mineola.

In Michigan, demonstrations in better plowing and multiple hitches are being given in the corn-borer infested counties. Two plowing demonstrations were held this week in Branch County and others will be held later. Demonstrations in the big team hitch were held at various points in Hillsdale County this week under the direction of H.F. Moxley, Michigan State College of Agriculture.





## NEW BULLETIN ON EUROPEAN STUDIES

"The European Corn Borer and its Controlling Factors in Europe," by W. R. Thompson and H.L.Parker, Technical Bulletin 59, United States Department of Agriculture.

The above bulletin covers the results of nine years of study in Europe of the corn borer and factors which contribute to the control there. Dr. Thompson has been studying the corn borer in its native habitat since the beginning of the work undertaken by the Bureau of Entomology, United States Department of Agriculture, in 1919, and has been in charge of the laboratory at Hyeres, France, since its establishment in 1921. Dr. Parker has been associated with him since 1922.

They report the European corn borer very generally distributed throughout Europe and practically always present in corn-growing areas but rarely of any real economic importance except in certain areas in central Europe. This control in Europe is not due to any single cause but is produced by a complex group of agricultural, meteorological, and parasitic factors.

"Since the destructive increase of the European corn borer in America may be due to a considerable extent to the absence of the parasitic enemies which attack it in its native home, it is desirable that as many as possible of these parasites be acclimatized in the infested area."

## ARTICLES APPEARING IN MAGAZINES

"Some recent insect immigrants which are proving dangerous - European Corn Borer," by G. W. Herrick, Cornell Rural School Leaflet, Vol.21, No.1.1927.

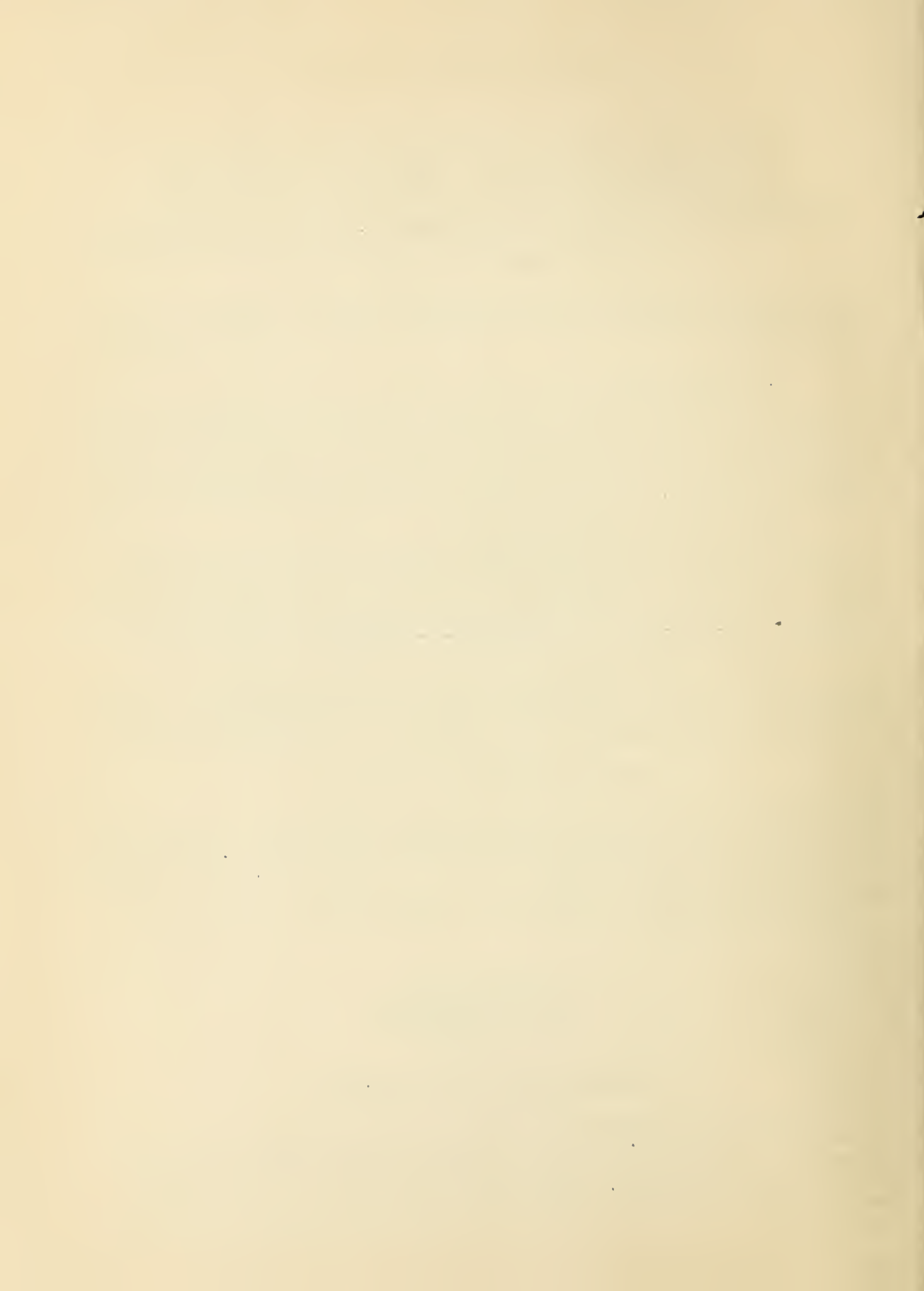
"Did the ten million dollar campaign check the borer," by L.E.Call, Farm and Fireside, February, 1928.

"Entomology in relation to industry," by D.M.DeLong, Scientific Monthly. November, 1927.

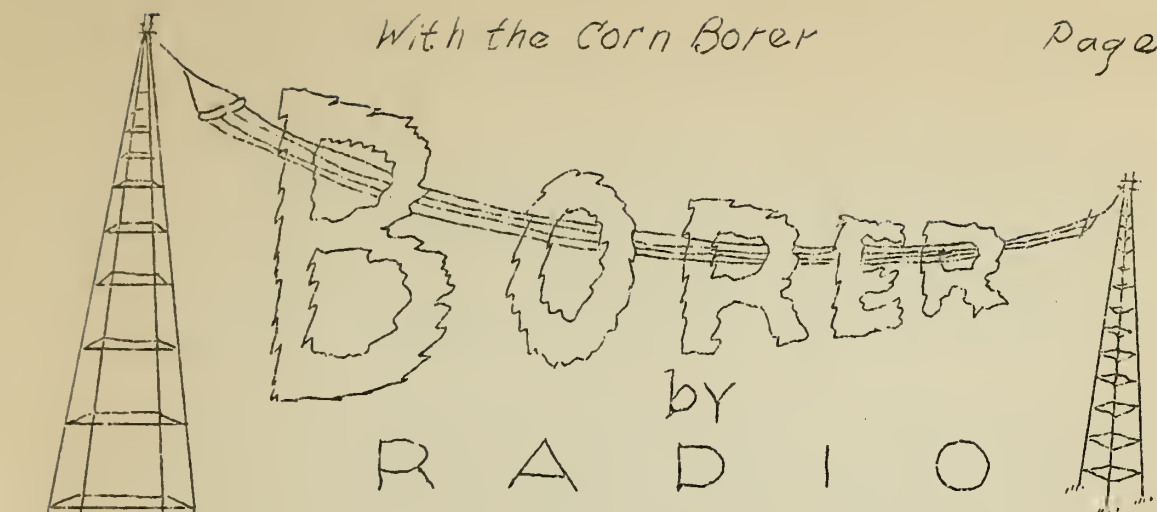


## A YANKEE FARMER AND THE CLEAN-UP

One New York farmer, Fred Astray of South Dayton, hit upon an ingenious plan for clean-up. Using an extraordinary long hitch behind his tractor, he secured a weighted float lengthwise behind the motor and immediately ahead of the plow. This swept a space of 8 feet, effectively breaking down the stubble and putting it into excellent shape to be buried by the plow.







The ninth and last weekly radio review  
of the corn-borer situation broadcast  
week of April 30th.

Back in 1917 when the vanguard of 2,000,000 American soldiers was starting for warring Europe, it was discovered that an army of European insects, corn borers, had obtained a foothold in America and was conducting a guerilla warfare upon the growers of our most important crop--corn.

The soldiers--except the hero dead and disabled--returned from the war to the fields and factories of the Nation. Farmers grappled with the job of after-war reconstruction. Meanwhile the corn borers were found at points farther and farther to the westward; toward the rich lands of the Corn Belt. Scientists observed these discoveries and looked for means of controlling the insect.

Suddenly, or so it seemed to all except the men who had anxiously watched the spread of the insect, it was realized that there was a corn-borer problem. The pest overran fertile cornland in southern Ontario, Canada. In 1924 it caused a total failure on 10 square miles of two Canadian counties; in 1925, on 400 square miles; and in 1926, on 1,200 square miles. Though the borer has been in the United States an equal length of time there has been little or no damage and this has been confined to a few farms bordering Lake Erie.

But aroused at the threat, farm leaders swung into action. Plans were formulated for stopping the insect advance. Fortunately, nine years of experimental work had shown what control measures held promise of some success. The research findings were that concerted, community-wide clean-ups in all infested regions were the only workable control measures. So Congress appropriated funds to pay farmers for their extra labor in cleaning up their cornfields and to cover the expense of clearing fields not taken care of by farmers.





By means of an educational campaign, farmers were informed of the clean-up regulations and told how to meet the inspection requirements. If their work passed the inspectors, farmers were paid up to a maximum of \$2 per acre for the extra labor of cleaning up. More than four and a quarter millions of dollars were paid to farmers as extra labor fees. After May 16, government crews entered the fields not cleaned up by farmers and completed the work.

Each farmer, in order to enable his place to pass inspection, was required to destroy all cornstalks or other corn remnants of the 1926 crop in the field, the barnyard, or elsewhere about the farm. The destruction could be accomplished by burning, plowing under, or finely shredding the pieces of the corn plant. Stubble had to be plowed under or destroyed.

How complete was this clean-up; how large a percentage of the borers were killed by these methods? These are questions which naturally arise as we review the history of the 1927 borer drive.

The regulations required all farmers in townships infested with the borers in the clean-up area to follow out instructions for destroying pieces of the corn plant. With the methods used a very nearly complete clean-up was obtained throughout most of the area. That answers the first part of our question.

Now about percentage of borers killed by clean-up: Where the infestation was sufficiently large to make a count of borers, the entomologists estimate that some 98 per cent of the borers were destroyed by the clean-up. This figure varies, of course, in different areas under observation.

But that does not mean that in 1927 there were 96 to 98 per cent fewer borers than in 1926. Far from it. Because of the high rate of increase of the insect, destruction of, say, 96 per cent of the borers will do no more than limit the increase, it is calculated, so that the next year there will be six borers in place of each five of the preceding year.

Here's the way it figures out:

Begin with a destruction, by the clean-up, of 96 per cent of the borers. Then there would still be at large 4 out of each 100 borers from last year's brood. Of these 4 borers, 2 will normally be females. These 2 females will lay, on the average, 400 eggs each--or 800 eggs for both of them. Destruction of eggs, and death of the young borers will leave only about 120--or 15 per cent--of the entire possible number of 800 to become established as corn destroyers. If these 120 come through the dangers that, fortunately, beset borers, the rate of increase will be one and one-fifth borers for each one of the preceding year.



But put that up against the possible increase of 50 borers to each one of the previous year which scientists calculate could have been in 1927 had there been no clean-up, or with the actual increase of five to one which occurred in 1926 when there was no general clean-up, and it will be seen that the hard labor of disposing of corn remnants shows results in corn-borer control.

Another way of finding out what the clean-up has done is to examine the experience of farmers who did the work. Here are a couple of corn-borer "True Stories" from infested regions which tell, from the individual farmer's standpoint, the results of the 1927 campaign:

Carl J. Ackerman, a farmer near Toledo, Ohio, says that in 1926 his 10 acres of sweet corn was an almost total loss, and that his 20 acres of field corn were badly damaged. In 1927, after the clean-up, he found that the infestation was much less and the damage was slight. He is making another thorough clean-up this year.

E. S. Knapp of Monroe, Michigan, has had corn borers in his fields for five years. He says that he followed thorough clean-up practices each year of the five, but that his labor was largely lost because other fields in the neighborhood were not cleaned up. The borers seemed to increase in numbers and more damage was done each year--- until 1927. Last year, with complete community-wide clean-up, Mr. Knapp's loss seemed to be cut about in half. Naturally, he is cleaning up his farm again this year and urges his neighbors to do likewise.

In the light of the experience of 1927, it is concluded that the corn borer can be controlled by mechanical means. Therefore, the United States Department of Agriculture plans to continue this year educational work to bring to every farmer in the corn-borer infested area knowledge of these methods by which the borer can be kept down economically and practically.

Meanwhile, Federal and State scientists are trying to find other methods of control which will supplement low-cutting, ensiling, shredding, feeding, burning, and plowing.

Scouting continues in an effort to determine in so far as possible just how far the borer has advanced so that control work may be made most effective.

Strict quarantine is being enforced to prevent the spread of the borer by artificial means. States desiring to enforce a clean-up without compensation have the cooperation of the Federal department.

